MAGNETOMETER HAVING A DYNAMICALLY ADJUSTABLE BIAS SETTING AND ELECTRONIC VEHICLE COMPASS INCORPORATING THE SAME

ABSTRACT OF THE DISCLOSURE

According to some embodiments of the present invention, a magnetometer includes at least one sensor for sensing a magnetic field component, a biasing circuit, and a processor. The sensor generates an output signal having a signal characteristic that varies in response to the sensed magnetic field component and in response to an applied bias. The biasing circuit dynamically biases the sensor in response to a bias setting signal. The processor is coupled to receive the output signal from the sensor and coupled to the biasing circuit. The processor is operable to generate the bias setting signal and thereby control the biasing circuit to dynamically bias the sensor such that the signal characteristic of the output signal is maintained in a target range. The processor determines the magnetic field component sensed by the sensor as a function of the bias setting applied to the sensor.